examples of Figs. 68E and 68F, the middle portion located between the IC chip 1 and the board 4 is mixed with a smaller amount of inorganic filler than that of the portions brought in contact with the IC chip 1 and the board 4 or with no inorganic filler. Therefore, the elastic modulus becomes reduced, allowing the stress alleviation effect to be produced. By selectively employing an insulating resin of high adhesion to the IC chip 1 and the board 4 as the insulating resin of the portion brought in contact with the IC chip 1 and the board 4, it is allowed to select the loadings or material of the inorganic filler 6f so that the portion brought in contact with the IC chip 1 comes to have a coefficient of linear expansion closer to that of the IC chip 1 and select the loadings or material of the inorganic filler 6f so that the portion brought in contact with the board 4 comes to have a coefficient of linear expansion closer to that of the board 4. If the loadings of the inorganic filler 6f is determined from this point of view, then, as indicated by the solid line in Fig. 68F, the amount of the inorganic filler is mixed less in the order of a portion located in the vicinity of the IC chip 1, a portion located in the vicinity of the board 4, and a middle portion located between the vicinity of the IC chip 1 and the vicinity of the board 4. With this construction, the coefficient of

linear expansion of the portion brought in contact with the IC chip 1 comes close to that of the IC chip 1. Therefore, both the members are hard to separate, and since the coefficient of linear expansion of the portion brought in contact with the board 4 comes close to that of the board 4, both the members are hard to separate.

In any one of the cases of Figs. 68A through 68F, it is practically preferable to set the amount of the inorganic filler within a range of 5 to 90 wt%. When the ratio is lower than 5 wt%, the mixture of the inorganic filler 6f is meaningless. When the ratio exceeds 90 wt%, the adhesive strength is extremely reduced, and it is difficult to form a sheet, leading to a disadvantage.

When the IC chip 1 is thermocompression-bonded to the board 4 employing a film of a multilayer structure constructed of a plurality of resin layers 6x and 6y or resin layers 6x, 6y and 6z as described above as an insulating resin layer, the insulating resin 306m is softened and melted by heat at the time of bonding, causing the mixture of the resin layers. Therefore, finally, the definite boundaries between the resin layers disappear, and the inclined inorganic filler distributions as shown in Fig. 68 result.

Furthermore, in the twenty-ninth embodiment or the modification examples, it is also possible to employ

different insulating resins for insulating resin layer that has a portion or layer including the inorganic filler 6f or the insulating resin layer in which the inorganic filler distribution is inclined, according to the portion or the resin layer. For example, it is also possible to employ an insulating resin that improves the adhesion to the film material to be used on the IC chip surface for the portion or the resin layer brought in contact with the IC chip 1 and employ an insulating resin that improves the adhesion to the material of the board surface for the portion or the resin layer brought in contact with the board 4.

According to the twenty-ninth embodiment and the various modification examples thereof, no or a smaller amount of inorganic filler 6f exists in the bonding interface of the IC chip 1 or the board 4 and the insulating resin layers 6 and 306b, and the innate adhesion of the insulating resin is effected. This increases the insulating resin of high adhesion in the bonding interface, allowing the adhesion strength of the IC chip 1 or the board 4 and the insulating resin 306m and improving the adhesion to the IC chip 1 or the board 4. With this arrangement, the operating life is improved during a variety of reliability tests, and the peel strength to bending is improved.

If an inorganic filler 6f, which does not